Amendments to the Claims:

1. (currently amended) An amperometric biosensor system for the detection of analytes comprising:

a) at least one biocatalyst producing a pH change by its interaction with the analyte; the biocatalyst not belonging to a group of oxidoreductase enzymes;

b) at least one compound exhibiting different redox properties in its protonated and non-protonated forms (pH-sensitive redox compounds) selected from ~~in~~ the group consisting of cyclic hydrocarbons, containing from 4 to 30 carbon atoms and substituted with at least one group selected from -OH, -SH, $-NH_2$, =O, =S, =NH, $-OR_1$, $-SR_1$, $-NHR_1$, $-NR_1R_2$, and $=NR_1$, wherein R_1 and R_2 are hydrocarbon chains optionally further substituted, or selected from ~~in~~ the group consisting of heterocyclic compounds containing from 3 to 30 carbon atoms and one or more heteratoms selected from ~~in~~ the group consisting of N, S, O. Se, Te, B, P, As, Sb, and Si, optionally substituted with a group selected for -OH, -SH, $-NH_2$, =O, =S, -NH, -OR, $-SR_1$, $-NHR_1$, $-NR_1R_2$, and $=NR_1$, wherein R_1 and R_2 are independent hydrocarbon chains;

c) a working electrode; and

d) a reference electrode;

e) ~~being said~~ the electrodes being connected through an ammeter.

2. (currently amended) The biosensor system according to Claim 1, wherein the ~~said~~ biocatalyst is selected from ~~in~~ the group consisting of enzymes, synzymes, cells, cell components, tissues, imunoproteins, nucleic acids and extracts, fractions, fragments, homogenates, and lysates thereof.

3. (currently amended) The biosensor system according to Claim 2, wherein the ~~said~~ enzyme is selected from ~~in~~ the group consisting of hydrolase, ~~oxydoreductase,~~ transferase, lyase, and ligase.

4. (currently amended) The biosensor system according to Claim 2, wherein the ~~said~~ enzyme is selected from ~~in~~ the group consisting of phosophorylase, decarboxylase, esterase, phosphatase, and deaminase.

5. (currently amended) The biosensor system according to Claim 2, wherein the ~~said~~ enzyme is selected from ~~in~~ the group consisting of urease, oxalacetate decarboxylase, glucose oxidase, carbonic anhydrase, penicillinase, and apyrase.

6. (currently amended) The biosensor system according to Claim 1, wherein the ~~said~~ pH-sensitive redox compound ~~(b)~~ is in the form of a monomer, oligomer or polymer.

7. (currently amended) The biosensor system according to Claim 6, wherein the ~~said~~ pH-sensitive redox compound ~~(b)~~ is a pH indicator. ~~selected among the pH indicators, phenoxazines and phenothizines dyes, and natural antioxidants.~~

8. (currently amended) The biosensor system according to Claim 6, ~~Claim 7,~~ wherein the ~~said~~ pH-sensitive redox compound ~~(b)~~ is selected from ~~in~~ the group consisting of hematoxylin, hematein, methylene blue, quercitin, flavonoids, alkyl gallates, polymerirtho-phenylenediamine and ~~or~~ para-phenylendiamine.

9. (currently amended) The biosensor system according to Claim 1, wherein the ~~said~~ working electrode ~~(c)~~ is a solid composite electrode, ~~or~~ platinum electrode, ~~or~~ gold electrode, ~~or~~ mercury electrode or glassy carbon electrode.

10. (currently amended) The biosensor system according to Claim 1, wherein the ~~said~~ reference electrode ~~(d)~~ is selected from ~~in~~ the group consisting of Ag/AgCl and calomel electrodes.

11. (currently amended) A method for the determination of analytes characterized by the use of [[a]] the biosensor system as claimed in Claim 1. ~~claim 1.~~

12. (currently amended) The ~~A~~ method according to Claim 11, wherein the ~~said~~ method comprises the steps of: ~~consists in:~~

(a) placing the electrodes in a measuring solution;

(b) applying a suitable potential between the electrodes;

(c) measuring a background current;

(d) adding to the solution the sample containing the analyte to be determined;

(e) measuring the current change that is proportional to the analyte concentration; and

(f) optionally subtracting the current change measured with a blank electrode from the value obtained in (e).

13. (currently amended) The ~~A~~ method according to Claim 11, wherein the ~~said~~ method comprises the steps of: ~~consists in:~~

(a) applying a suitable potential between the electrodes;

(b) measuring a background current;

(c) contacting the biosensor with the sample containing the analyte;

(d) measuring a current change that is proportional to the analyte concentration;

(e) optionally subtracting the current change measured with a blank electrode from the value obtained in (d).

14. (currently amended) A method for detecting analytes ~~according to Claim 11, wherein said biocatalyst contained in the biosensor system is selected among the biocatalysts that are inhibited by said analyte, said method~~ consisting in:

(a) providing an amperometric biosensor system comprising:

(i) at least one biocatalyst producing a pH change by its interaction with the analyte; the biocatalyst not belonging to a group of oxidoreductase enzymes; the biocatalyst being inhibited by the analyte;

(ii) at least one compound exhibiting different redox properties in its protonated and non-protonated forms (pH-sensitive redox compounds) selected from the group consisting of cyclic hydrocarbons, containing from 4 to 30 carbon atoms and substituted with at least one group selected from -OH, -SH, $-NH_2$, =O, =S, =NH, $-OR_1$, $-SR_1$, $-NHR_1$, $-NR_1R_2$, and $=NR_1$, wherein R_1 and R_2 are hydrocarbon chains optionally further substituted, or selected from the group consisting of heterocyclic compounds containing from 3 to 30 carbon atoms and one or more heteratoms selected from ~~in~~ the group consisting of N, S, O. Se, Te, B, P, As, Sb, and Si, optionally substituted with a group selected for -OH, -SH, $-NH_2$, =O, =S, -NH, -OR, $-SR_1$, $-NHR_1$, $-NR_1R_2$, and $=NR_1$, wherein R_1 and R_2 are independent hydrocarbon chains;

(iii) a working electrode; and

(iv) a reference electrode;

(v) the electrodes being connected through an ammeter;

(b) placing the electrodes in a measuring solution;

(c) ~~(b)~~ applying a suitable potential between the electrodes;

(d) ~~(c)~~ adding the substrate of the ~~said~~ biocatalyst to the measuring solution;

(e) ~~(d)~~ measuring a background current;

(f) ~~(e)~~ adding to the solution the sample containing the inhibiting-analyte to be determined;

(g)~~(f)~~ measuring a current change that is proportional to the inhibiting-analyte concentration; and

(h) ~~(g)~~ optionally subtracting the current change measured with a blank electrode from the value obtained in (g). ~~(f).~~

15. (currently amended) A method for detecting analytes ~~according to Claim 11, wherein said biocatalyst contained in the biosensor system is selected among the biocatalysts that are inhibited by said analyte said method~~ consisting in:

(a) providing an amperometric biosensor system comprising:

(i) at least one biocatalyst producing a pH change by its interaction with the analyte; the biocatalyst not belonging to a group of oxidoreductase enzymes; the biocatalyst being inhibited by the analyte;

(ii) at least one compound exhibiting different redox properties in its protonated and non-protonated forms (pH-sensitive redox compounds) selected from the group consisting of cyclic hydrocarbons, containing from 4 to 30 carbon atoms and substituted with at least one group selected from -OH, -SH, $-NH_2$, =O, =S, =NH, $-OR_1$, $-SR_1$, $-NHR_1$, $-NR_1R_2$, and $=NR_1$, wherein R_1 and R_2 are hydrocarbon chains optionally further substituted, or selected from the group consisting of heterocyclic compounds containing from 3 to 30 carbon atoms and one or more heteratoms selected from ~~in~~ the group consisting of N, S, O. Se, Te, B, P, As, Sb, and Si, optionally substituted with a group selected for -OH, -SH, $-NH_2$, =O, =S, -NH, -OR, $-SR_1$, $-NHR_1$, $-NR_1R_2$, and $=NR_1$, wherein R_1 and R_2 are independent hydrocarbon chains;

(iii) a working electrode; and

(iv) a reference electrode;

(v) the electrodes being connected through an ammeter;

(b) applying a suitable potential between the electrodes;

(c) ~~(b)~~ adding the substrate of the ~~said~~ biocatalyst;

(d) ~~(c)~~ measuring a background current;

(e) ~~(d)~~ contacting the biosensor with the sample containing the inhibiting-analyte system;

(f) ~~(e)~~ measuring a current change that is proportional to the inhibiting-analyte concentration; and

(g) ~~(f)~~ optionally subtracting the current change measured with a blank electrode from the value obtained in (f). ~~(e).~~

16. (currently amended) The ~~A~~ method according to Claim 11, wherein the ~~said~~ determination of analytes is performed in the fields of human and veterinary diagnostics, industrial processes, agro-food industry, pharmaceutical industry, or environmental monitoring.

17. (New) The biosensor system according to Claim 7, wherein the pH indicator is selected from the group consisting of phenoxazines, phenothizines dyes, and natural antioxidants.